CLAIMS

1. A method for reducing radar cross section of an antenna arrangement, **characterized by** the step of:

dynamically controlling an impedance load of the antenna arrangement to thereby reduce scattering of a signal from an external source irradiating the antenna arrangement, whereby a reflection coefficient of the antenna arrangement will be changed by fully matching the impedance load during a transmit pulse and obtaining at least a trade-off matching during a defined receive period, whereby, during the time remaining, the antenna arrangement will present a low radar cross section by having a very poor matching with a correct phase in an operating frequency band.

2. The method according to claim 1, **characterized by** the further step of:

triggering, at non periodic intervals, the dynamically controlled impedance load of the antenna arrangement by a transmit pulse to obtain a full frequency matching and thereby a low power loss during the transmit pulse; and

triggering, at non-periodic intervals corresponding to a desired range gate, the dynamically controlled impedance load to a trade-off matching for reception of echoes at a desired distance, actively reducing undesired scattering from the antenna arrangement during all other periods.

3. The method according to claim 2, **characterized by** the further step of:

generating the dynamically controlled impedance by means of at least one controlled inner tuning device by controlling the inner tuning device during transmit and receive periods as well as during the period when not actively transmitting or receiving.

4. The method according to claim 3, **characterized by** the further step of:

creating the inner tuning device by the use of a switched impedance arrangement (10) being appropriately switched to fully or partly conducting during respective phases of operation and a proper part of the impedance arrangement being non-conducting during the rest of the time.

5. The method according to claim 3, **characterized by** the further step of:

creating the inner tuning device by means of an impedance arrangement (10) having a portion with at least one diode which is forward biased during at least a transmission phase, and a second portion (12) of the impedance arrangement being forward biased during the rest of the time.

6. The method according to claim 3, **characterized by** the further steps of:

creating an inner tuning device by means of an impedance arrangement being at least one gas discharge tube ignited by the transmit pulse.

7. The method according to claim 1, **characterized by** the further steps of:

creating by means of the impedance load of the antenna arrangement a first state being fully matched for transmission, a second state being "trade-off matched" for reception providing a lower antenna radar cross section and a third state with the antenna being "closed" providing a lowest possible radar cross section of the antenna when not in use.

8. A dynamic antenna arrangement for reducing radar cross section, **characterized in**

a control unit which dynamically controls an impedance load of the antenna arrangement to thereby reduce scattering of a signal from an external source irradiating the antenna arrangement, whereby a reflection

coefficient of the antenna arrangement is changed to fully match the impedance load during a transmit pulse and producing at least a trade-off matching during a defined receive period, whereby during the remaining time the antenna arrangement presents a low radar cross section by choosing the impedance in an appropriate manner.

9. The dynamic antenna according to claim 8, **characterized in**

that the dynamically controlled impedance load is triggered, at non periodic intervals, by a transmit pulse to obtain a full frequency matching and thereby a low power loss during the transmit pulse and

that the dynamically controlled impedance load is triggered, at a desired range gate, to at least a trade-off matching for reception of echoes at a desired distance, to thereby actively reduce undesired scattering from the antenna arrangement during reception and reducing radar cross section of the antenna during inactive periods when no transmission or reception.

10. The dynamic antenna according to claim 9, **characterized in**

that the dynamically controlled impedance is formed by means of at least one controlled inner tuning device which can be controlled during transmit and receive periods as well as period of not actively transmitting or receiving.

11. The dynamic antenna according to claim 10, **characterized in**

that the inner tuning device is formed by at least one switched impedance arrangement (10) which can be switched to fully or partly conducting during respective phases of operation and can be switched to a state closing the antenna during the rest of the time.

12. The dynamic antenna according to claim 10, **characterized in**

that the inner tuning device forming the impedance arrangement (10) is at least one diode, which is biased forward during an active phase of operation and being back-biased during the rest of the time.

13. The dynamic antenna according to claim 10, **characterized in** that the inner tuning device forming the impedance arrangement is at least one gas discharge tube being ignited by the transmit pulse.